



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,044	03/04/2002	Timothy J. Shepodd	SD-8345	6501

7590 03/04/2003

TIMOTHY P. EVANS  
Sandia National Laboratories  
MS 9031  
7011 East Avenue  
Livermore, CA 94550

EXAMINER

THEXTON, MATTHEW

ART UNIT	PAPER NUMBER
----------	--------------

1714

DATE MAILED: 03/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/091,044

Applicant(s)

SHEPODD ET AL.

Examiner

Matthew A. Thexton

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Oath/Declaration*

1. The declaration received 22 May 2002 is free of defects.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheppold, et al. (US 5624598) in view of Streitwieser, Jr., et al. and Kawamoto (JP 48-43116, translation attached to reference) and Morikawa, et al. (US 6018018). The Sheppold reference discloses the general application of gettering hydrogen using an appropriately matched hydrogenation catalyst and hydrogenation susceptible compound. Further, the reference discloses systems which employ high surface area carriers and/or binders and fillers to permit utility in various environments. This reference teaches all of the elements of all of the claims except for the particular hydrogenation susceptible compound, the polyphenyl ether.

The Streitwieser reference discusses the well known catalytic hydrogenation chemistry of substituted benzenes, setting forth the caveat that some functional groups will hydrogenate preferentially, including "COR" which is an ether. The Kawamoto reference discloses the hydrogenation at temperatures up to 150 degrees Celsius of bis-(4-aminophenyl)-ether to bis-(4-aminocyclohexyl)-ether using Ruthenium catalyst.

Art Unit: 1714

The Morikawa reference also discloses catalytic hydrogenation of phenyl ether to saturate the aromatic portion (column 9, line 39 and 43) and employs temperatures up to 300 degree Celsius (column 12, lines 20-33). In view of Kawamoto and Morikawa, the Streitwieser caveat is not a counter suggestion when the ether is bis-phenyl. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed bis-phenyl ethers as catalytic hydrogenation compounds in the techniques taught by Sheppold with a reasonable expectation of success.

#### ***Citation of Pertinent Prior Art***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Anderson, et al. (US 3896042) discloses getting of hydrogen using hydrogenation catalyst and dimerized propargyl phenyl ether or dimerized biphenyl propargyl ether as the hydrogenation catalyst. The bond which is catalytically hydrogenated is disclosed to be the triple bond. There is no suggestion one way or the other that the aromatic structure would hydrogenate before the ether bond.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew A. Thexton whose telephone number is 703-305-5085. The examiner can normally be reached on Monday-Friday, 8:30 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan S Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned

Art Unit: 1714

are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5665.

A handwritten signature in black ink, appearing to read "MA Thexton".

Matthew A. Thexton  
Primary Examiner  
Art Unit 1714

March 1, 2003